

A New Paradigm For Safety And Health Metrics: Framework, Tools, Applications, And Opportunities



Stephen A. Newell
ORC

November, 2001

Framework



- “If You Don’t Know Where You Are Going, Chances Are You Will End Up Somewhere Else.”

Yogi Berra

Why Measure??



- Defines Vision And Mission Statements In Operational Terms
- Supports Continuous Improvement
- Allows Us To Demonstrate The Value of EH&S Programs and Services In Business Terms
- Axiom = “What Gets Measured Gets Done, What Gets Celebrated Gets Done Well”

Measurement Data Must Be:



- Precise and Accurate
- Difficult to Manipulate
- Significant to the Organization
- Able to be Benchmarked

Problems With Current Measure(s)



- Relying on any single metric is problematic
- OSHA rates do not drive superior safety and health performance
 - Overly inclusive
 - Not very accurate
 - The more pressure you put on them, the less accurate they get
- S&H measurement mindset is one of tracking failure or showing loss avoidance, not positive contribution to the business
- S&H metrics often undermine mgt. credibility

ORC Alternative Metrics Task Force



- 55 Companies Promoting A Balance Approach For S&H Metrics
- Reference Document Is Being Created That Will Be Provided To ORC Membership And Shared With Industry
- Initial Domestic S&H Focus Will Expand To International and Environmental Issues

Task Force Objectives



- Address Current Use Of OSHA Data As Primary S&H Metric
- Create A Useful Set Of Measurement Reference Materials That:
 - Support a balanced approach to measurement with **leading, trailing and financial measures**
 - Includes candidate measures and examples of model metrics processes
 - Are capable of eventually being “owned” by operators, and easily understood by company leadership
- Develop Benchmarking Alternatives

Reference Manual Must Support Wide Array of Users



- Menu Driven -- One Size Can't Fit All
- Metrics Will be Hierarchical
- Linkages Are Important
- Metrics Expressed in Terms Used by Other Parts of the Business
- Different Metrics Are Appropriate for Different Levels of the Enterprise -- Corporate, Business Unit, Facility

Insights Into An Alternative Approach

- Measure S&H Consistent With Other Parts of the Business (e.g. quality)
- Use S&H metrics to:
 - Drive Continuous Improvement
 - Measure process variables and outcomes
 - Incentivise the right behavior
 - Measure Performance
 - Make the “Business Case”

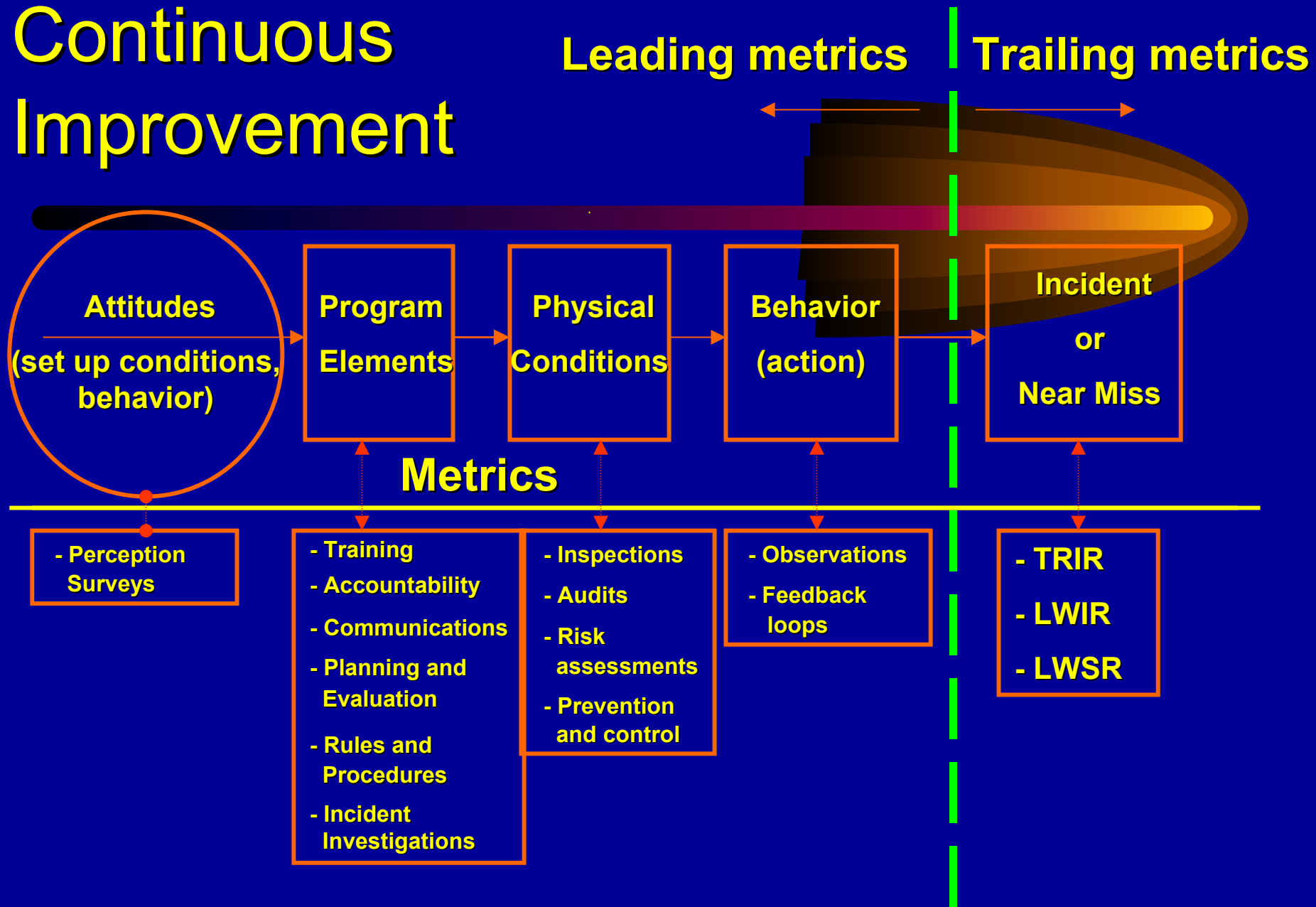
Balanced FrameworkMetrics

Simplified



- What did we do?
 - Selected leading indicators
- What were the impacts?
 - Injuries, illnesses, fatalities, workers' comp.
 - Productivity
 - Product quality
 - Marketability
 - Employee perceptions/morale
 - Cost benefit

Continuous Improvement



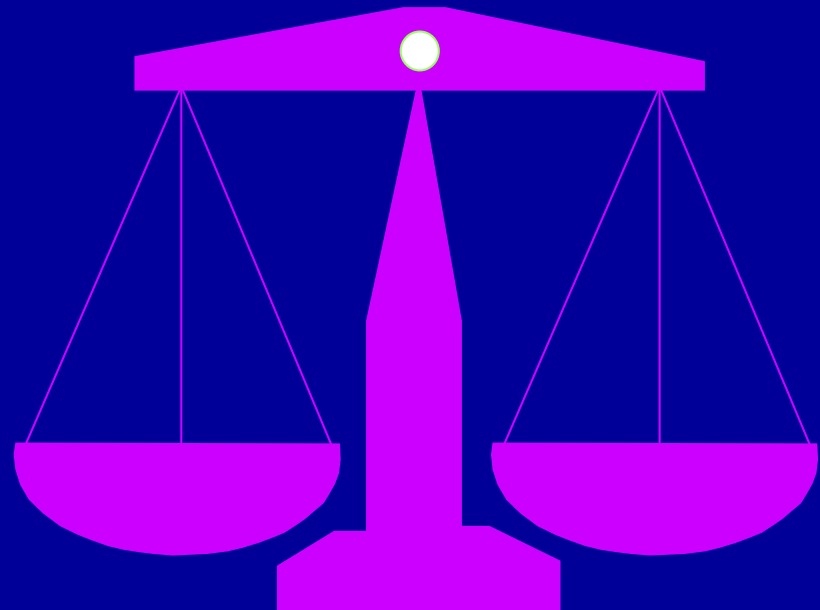
ORC Criteria for A Balanced Approach

“....measures...should consist of a linked series of objectives and metrics that are both consistent and mutually reinforcing.”

Robert S. Kaplan and David P. Norton,

The Balanced Scorecard

- ◆ Leading Indicators
- ◆ Trailing Indicators
- ◆ Financials



Leading Indicators

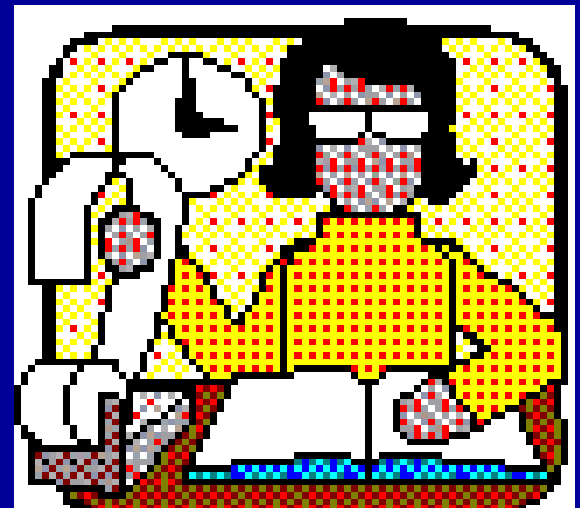
“Leading indicators are the performance drivers that communicate how outcome measures are to be achieved.”

Robert S. Kaplan and
David P. Norton,
The Balanced Scorecard



Task Force Approach

- ◆ Identify Key Areas to be Measured
- ◆ Create S&H Measurement Questions
- ◆ Develop Measures to Answer the Questions
- ◆ Rank Candidates



Safety and Health Management System

- 
- ◆ Active Leadership
 - ◆ Expectations and Involvement
 - ◆ Goal Setting and Action Planning
 - ◆ Communications
 - ◆ Employee Involvement
 - ◆ Employee Accountability
 - ◆ Hazard Identification and Elimination, and Safe Practices
 - ◆ Incident Investigation
 - ◆ Behavioral Feedback
 - ◆ Training and Education
 - ◆ Planning for Safe Conditions

Incident Investigation Measures



Q. Are incidents being investigated in a timely fashion?

Measure:

- **Average time from incident notification to investigation**

Q. Are the results being acted upon in a timely fashion?

Measures:

- **Average time from incident investigation to hazard abatement**
- **Completion rate of recommendations**
- **Average age of outstanding recommendations**

“Trailing” Metrics



◆ Definition: S&H outcomes that result from injury or illness-related events or exposures in the work environment.

- ◆ These outcomes may be positive or negative, depending upon the level of safety and health performance.
- ◆ Trailing measures not only gauge performance, but are critical for focusing S&H management system improvement efforts.

Examples of Negative “Outcomes”



- ♦ **Fatalities**
- ♦ **BLS/OSHA Injury/Illness Data**
- ♦ **Workers Compensation Data**
- ♦ **Production Downtime**
- ♦ **Litigation Expenses**
- ♦ **Labor Replacement**
- ♦ **Property Loss**
- ♦ **Regulatory Fines and Penalties**
- ♦ **Absenteeism**
- ♦ **Other**

Examples of Positive “Outcomes”



- Improved employee perceptions, morale, etc.
- Improved productivity
- Improved product quality
- Better employee retention, recruiting
- Improved customer perception/satisfaction

Trailing Metrics -- Proposed Approach



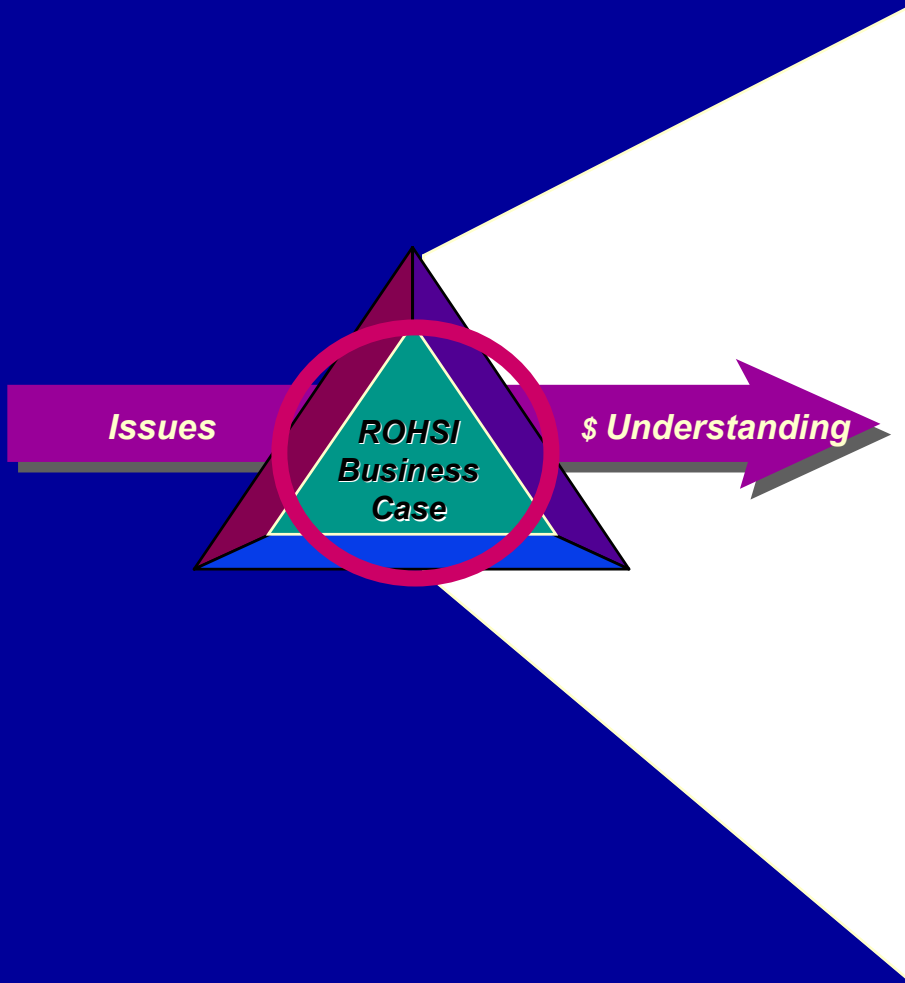
- ◆ Modified use of OSHA data
- ◆ Supplement with other information
 - ▢ Workers Compensation
 - ▢ Property Loss
 - ▢ Fines and Penalties
 - ▢ Other Management System Drivers
- ◆ Include “out of the box” metrics to demonstrate positive effects on the rest of business and overall business strategy

Goal of Financial Metrics



- ◆ Leading and trailing S&H metrics assess functioning of people, programs, and processes
- ◆ Financial metrics answer:
 - ⇒ *What contribution does S&H make to the “bottom line”?*
 - ⇒ *What is the financial impact of S&H decisions?*

ROHSI - What Does It Do?



Process Provides Results

- Understanding of how H&S investments impact operations
 - Worker productivity
 - Product quality
 - Customer satisfaction
- Financial & business metrics
 - Net present value
 - Return on Investment (ROI)
 - Internal rate of return
 - Discounted payback period
 - Production equivalent units
 - Impact on unit cost
 - Percentage impact on unit cost

Perception Surveys



- ◆ Why?/Value Of Perception Surveys
- ◆ Instruments Available
- ◆ What Is Covered -- 20 Elements
- ◆ 20 Elements to ORC's 9
- ◆ How to Conduct
- ◆ How to Analyze Results
- ◆ How to Benchmark

Applications: Four General Categories



- I. Drive Performance
- II. Support Continuous Improvement
- III. Track Progress
- IV. Make the Business Case

I. Driving Performance



- Translates mission and vision statements into operational terms
- Integrates S&H with the rest of the business
- Links S&H functions throughout the organization to overall business goals and objectives

Managing With Measures: Vertical Linkage Through Cascading Metrics



Enterprise:

Vision/Mission ➔ Goals/Objectives ➔ Strategies/Milestones



/Measures

Bus. Unit

G/O

S/M/M



Bus. Unit HSE

G/O

S/M/M



Site HSE

G/O

S/M/M

(R. Fulwiler)

II. Support Continuous Improvement



- ◆ Gather Information
- ◆ Analyze Results
- ◆ Identify Areas of Management System Deficiency
- ◆ Develop and Select Metrics to Improve/Manage System
- ◆ Evaluate Regularly

Tailoring Safety and Health Metrics to Your Organization

STEP 1:



STEP 2:



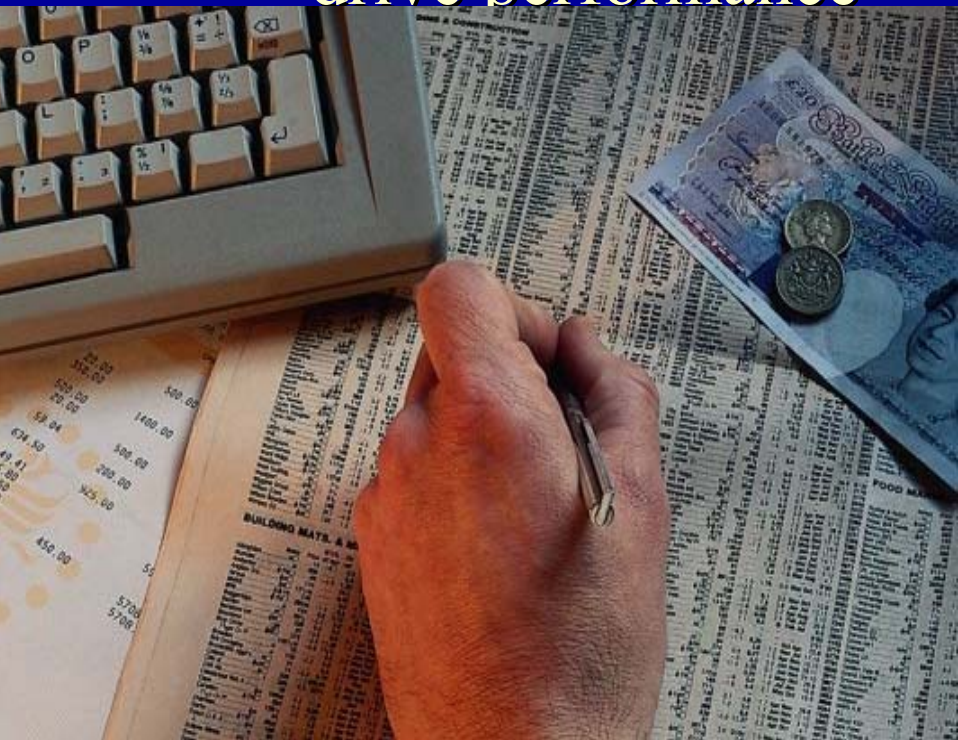
STEP 3:



STEP 4:

Which Indicators Matter?

- ◆ Get to the root cause(s)
- ◆ Measure key factors that drive performance



- ◆ Correlate with other indicators
- ◆ Support safety and health improvement strategy
- ◆ Link to enterprise business plan

III. Track Progress



- Measure trends
- Track progress relative to your goals
- Track progress relative to others

Demonstrating Performance: Integrated Metrics Matrix

PLANNING FOR SAFE CONDITIONS

Questions To Answer	Leading Metrics	Trailing Metrics	Financial Metrics	Perception Survey Subset
Are Safety and Health factored into design?	<ul style="list-style-type: none"> •% of design staff using ergonomic and safety design tools. •% of design staff with S&H training. •% of design staff with ergonomics training. •% of project hours assigned to S&H 	Rate of injuries in which inadequate or faulty design was identified as a root cause.	<ul style="list-style-type: none"> •% of projects with safety planning in the budget •Average ROI for design projects in which S&H are factored. •ROI of S&H design program 	Support for safety Is the whole organization seen as working together to create a safe work environment?
Are Safety and Health considered in purchasing and contracting?	<ul style="list-style-type: none"> •% of purchasing contracts with S&H specifications. 	Ratio of contractor injury rate to host injury rate		

IV. Making The “Business Case”

◆ Fear

- S&H often isn’t a real money maker
- Companies will shift focus from human life/well being to dollars and cents

◆ Reality

- S&H professionals can *still* keep companies focused on the high moral ground
- S&H is good business investment
- Quantifying investment/return (or loss) *strengthens* the moral case



Opportunities



- ◆ Spreading the “Word” and “Walkin’ the Talk”
- ◆ Benchmarking
- ◆ S&H Measures Incorporated Into Socially Responsible Investing and Sustainability

Benchmarking Possibilities



- ◆ Trailing Measures
 - OSHA Injury and Illness Rates
- ◆ Leading Indicators: Key Categories
 - Management Commitment
 - Employee Involvement
 - S&H Management System Implementation
- ◆ Financial Measures
 - Average ROI of S&H Investments
 - Average NPV of S&H Investments
- ◆ Employee Perceptions Are Critical

Safety and Health Performance and Social Responsibility



- ◆ “SRI” Community Looking For A Way To Measure Safety and Health Performance
- ◆ ORC Has Been Contacted To Provide A S&H Metrics “Module”
- ◆ Opportunity Worth Seizing?

Communication Is Critical



- Technical improvements in measuring safety and health efforts, by themselves, will not drive change.
- S&H professionals must learn to communicate to the rest of the business in terms that they understand.

What Is Different About ORC Effort



- Includes Performance “Drivers”
- Identifies Metrics/Linkages outside of S&H “Silo”
- Uses Financials and Other Means to Bridge Communication Gap
- Focuses on Positive Contributions S&H Can Make to the Business
- Hopefully Will Initiate Mass Change -- incorporates “truth and labeling” re. the OSHA data

Will Improving S&H Metrics Make A Difference?



- ◆ Drive S&H Excellence by Focusing on Things That Matter
- ◆ Reduce Effort Spent on the OSHA Numbers
- ◆ Link Safety and Health Performance Closer to the Overall Business Strategy
- ◆ Enhance Ability of S&H to Compete for Resources Internally
- ◆ Improve Usefulness of Benchmarking